

REMARKS

Claims 1, 3-16, 18-36, 41-42 and 47 are pending and are rejected herein under 35 U.S.C. §103(a) over a combination of Karabinis (U.S. Patent No. 5,937,332), Varieras (European Patent No. EP 0559557), and/or Kawano et al. (U.S. Patent No. 4,972,346), and/or Karabinis et al. (U.S. Patent No. 6,134,437).

Each of these §103(a) obviousness rejections included at least three different references, and a maximum of four different references. The Applicants respectfully submit that, despite a new reference being substituted for one of the references previously cited in the last Office Action, the references as a whole still fail to teach a person of ordinary skill in the art, such that the claimed invention would be obvious.

SECTION 103 REJECTIONS

Specifically, the only real difference between the §103 rejections set forth in this Action and in the earlier Office Action is the substitution of the Varieras reference for the reference of Seumitsu. The Varieras reference, and specifically the four-sentence English abstract of the French language European patent, is recited to by the Examiner for teaching merely downconversion of a GPS satellite signal. Thus, the Varieras reference is merely recited as teaching one piece of the overall claim system. The Examiner then argues that that new piece, in combination with other pieces that were cited, somehow renders obvious the invention. However, such an argument is not specifically directed to what would be taught to a person of ordinary skill in the art by the three and four-reference combination. Rather, it is simply an exercise in gathering up unrelated pieces to make the invention.

REJECTION OF CLAIMS 1, 3, 6, 10-13, 16, 18, 21-24, AND 26-30

These claims are rejected under §103(a) over Karabinis/Varieras/Kawano et al. However, those references all disclose different systems that are complete operational systems unto themselves, and there is no teaching or suggestion in any one of them to somehow modify the self-contained system of the base reference to offer any advantages over that self-contained system that is disclosed. In such a scenario, a person of ordinary skill in the art would not be directed or taught to essentially scavenge parts from one self-contained system and somehow try to add them to another self-contained system to try to come up with the present invention. Thus, the references themselves do not provide any such teaching, as is required, to somehow make the combination suggested by the Examiner. Certainly, they do not establish that the invention is obvious.

It is well established that “obvious to try” is not the standard under §103 for establishing obviousness. Rather, there has to be a teaching in the combination of references to combine these references or to somehow modify the base reference to yield the present invention. Furthermore, there must be a teaching of how to modify the base reference with one or more other references. While various individual parts of the claimed invention might be found in the three- and four-reference combinations set forth by the Examiner, that does not establish that it would be obvious to a person of ordinary skill in the art to provide the combination that is the invention. In fact, the necessity of even pulling together three and four completely different references teaches against the finding of obviousness.

More specifically, the Karabinis reference is referred to for teaching a satellite repeater. However, the Karabinis system is completely self-contained and simply repeats the satellite signal into a building without processing as taught by the invention.

The Examiner next turns to the teaching from four lines of an English language abstract in the Varieras system, which teaches a downconversion of a GPS signal for use with a ground station. The Examiner then argues that it would be obvious to adapt a teaching of retransmitting the GPS signal of Varieras to the satellite repeater of Karabinis. However, there is absolutely no such obviousness established by those references. Karabinis operates in a satisfactory manner on its own. The conventional teaching of Karabinis is to simply repeat the signal in the structure, not to modify it. The Varieras reference, on the other hand, addresses a ground stations application. There is, therefore, no motivation or teaching in Karabinis or Varieras to somehow modify Karabinis. Certainly, there is no teaching to modify Karabinis to provide down conversion. In fact, such downconversion would eliminate the purpose of Karabinis wherein a satellite phone, or other device, is looking for the repeated satellite signal and not a downconverted signal. Thus, modifying Karabinis with the teaching of Varieras would actually destroy the proper functioning of the Karabinis system. It is well established that a person of ordinary skill in the art would never make a modification of the base reference that would render the base reference inoperable, but that is exactly what is suggested by the Examiner. As such, there is no proper teaching to combine Varieras and Karabinis.

Next, recognizing that even Karabinis as modified by Varieras would not render obvious the claimed invention, the Examiner has to turn to another completely unrelated reference of Kawano et al. for somehow teaching the claim elements directed

to downconverting the GPS signal, amplifying and filtering the IF signal, then upconverting the IF signal to an RF signal, to a second GPS signal, or to an unlicensed frequency signal. The present invention does not simply repeat a GPS signal into a building as is taught by the base Karabinis reference. Rather, the present invention downconverts the GPS signal to an IF signal and provides processing of the IF signal at the intermediate frequency. Such processing includes amplifying and filtering the IF signal. Therefore, the present invention takes advantage of the significant benefits provided by IF amplifying and filtering and other processing to provide a more robust and efficient system. The claimed invention further upconverts the IF signal to an RF signal or a second GPS signal before retransmitting the RF or second GPS signal inside a structure.

The Kawano et al. reference, on the other hand, is a high frequency signal booster, and is completely unrelated to GPS signals or their processing. However, the Examiner notes that the other two references do not provide all the claimed elements and, thus, Kawano et al. must be relied upon for downconversion to IF and upconversion to RF or another frequency. Again, there is no motivation or teaching provided by the Kawano et al. reference to somehow supplement the combination of Karabinis and Varieras such that a person of ordinary skill in the art would find it obvious from those three unrelated references to somehow teach the invention. As noted, the conventional wisdom as provided by the Karabinis reference would be to provide direct repetition of a satellite signal into a building, as shown in Figure 5A of Karabinis. There is no teaching in Kawano et al. of any particular advantage or motivation of modifying Varieras, which is then utilized to modify Karabinis. Karabinis desires direct repetition. Varieras desires simple downconversion. Now, the Examiner

asserts that Kawano et al. teaches IF processing and provides the reason to mix all three systems together. Such logic is not a proper establishment of obviousness under §103(a). In short, a person of ordinary skill in the art would never be led to the present invention from those three references without having knowledge of the actual invention itself. Such prior knowledge by a person of ordinary skill in the art is improper hindsight knowledge and does not establish a *prima facie* case of obviousness. This is well established.

Accordingly, claims 1, 3, 6, 10-13, 16, 18, 21-24 and 26-30 are not rendered obvious under §103(a) by the three-reference combination of Karabinis/Varieras/ Kawano et al. and are allowable.

REJECTION OF CLAIMS 4-5, 7-9, 14-15, 19-20, 25, AND 31-35

These claims are all rejected under §103(a) not only over the three reference combination noted above, but also further adding another reference, Karabinis '437. The Examiner relies upon Karabinis '437 for disclosing retransmitting a satellite signal utilizing an unlicensed frequency signal. The Examiner cites to Karabinis '437 that discloses the utilization of a short-range, low power microwave link. This is nothing more than an interface between a cellular handset and a stand-alone satellite telephone. Again, it is completely unrelated to the purpose of the invention. That is, the unlicensed frequency signal referred to by the Examiner is not at all related to providing a GPS signal into a building. Therefore, the Karabinis reference teaches nothing more than the fact that other frequency ranges exist. It certainly does not teach downconverting the GPS signal, amplifying and filtering the IF signal, then upconverting the IF signal to an RF signal, second GPS signal, or an unlicensed frequency signal.

As such, it does not provide any teaching that links the three unrelated references such that the four reference combination would render obvious the claimed invention.

With respect to independent claims 14 and 31, and their respective dependent claims, those claims recite the combination of downconverting the GPS signal to an IF signal, amplifying the IF signal, and upconverting the IF signal to an unlicensed frequency signal wherein the unlicensed frequency signal is retransmitted into a structure and received by another unit wherein it is downconverted to a second IF signal, amplified, and upconverted to a GPS signal. Those claims, even assuming that a person of ordinary skill in the art would be motivated to even make such a combination, still would not teach the multiple steps of converting to an unlicensed frequency band, transmitting the unlicensed frequency band, and then downconverting to an IF signal, amplifying and upconverting to another GPS signal. Thus, the four-reference combination, even if properly combined, would not provide the teaching of the method as recited in claim 14 or an apparatus as recited in claim 31. Therefore, the four-reference combination of Karabinis/Varieras/Kawano et al./Karabinis '437 fails to render obvious the invention as set forth in claims 4-5, 7-9, 14-15, 19-20, 25, and 31-35 and, thus, those claims are all in an allowable form.

REJECTION OF CLAIMS 36, 41-42 AND 47

These claims are rejected over the three reference combination of Karabinis/Kawano et al./Karabinis '437. The Varieras reference is left out. Claim 36, however, recites a method of receiving a satellite signal, downconverting it to IF, amplifying and filtering the IF signal and upconverting the IF signal to an unlicensed frequency signal to

be retransmitted within a structure. Claim 36 further recites then receiving the unlicensed frequency signal, downconverting it to IF, amplifying it and upconverting it to produce a second satellite signal, which is retransmitted inside the structure. For the reasons noted above with respect to claims 7 and 14, the four reference combination did not teach the multiple conversion and IF processing. Certainly a three reference combination of those same references still would not teach the claimed invention of claim 36. Thus, claim 36 and dependent claim 41 are allowable over the cited references. Similarly, claims 42 and 47 each recite a repeater system, utilizing a primary repeater that provides downconversion of a satellite signal to IF, amplification and filtering, and a secondary repeater that provides similar IF processing and upconversion to a second satellite signal. For the reasons discussed above with respect to claim 36, claims 42 and 47 are not rendered obvious by the cited combination because that combination does not teach all the elements required by claim 42. Thus, claims 36, 41-42 and 47 are allowable.

CONCLUSION

Applicants submit that the currently pending claims are in an allowable form and, therefore, requests a Notice of Allowability of the application at the Examiner's earliest convenience. If any issues remain in the case which might be handled in an expedited fashion, such as through a telephone call or an Examiner's Amendment, the Examiner is certainly encouraged to telephone the Applicants' representative or to issue an Examiner's Amendment.

The Applicants know of no fees due herein with this submission. However, if any charges or any credits are necessary, please apply them to Deposit Account 23-3000.

Respectfully submitted,

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